PATENT CLAIMS

1. A method for producing nitrogen fertilizer from organic waste products in the liquid phase and for hygienizing the wastes and reducing the emissions by thermal treatment using mineral or organic additions,
characterized by that the waste product is heated at underpressure to temperatures between 40 and 90 °C, the escaping gas containing carbon dioxide and ammonia is cooled down and introduced into an aqueous absorption agent or brought into contact with the latter, the nitrogen fertilizer formed thereby is discharged and the excess gas not having been absorbed and containing carbon dioxide is pumped back into the process, wherein the underpressure generated at the beginning of the process by a vacuum pump is autogenously maintained by the progress of the process.

2. A method according to claim 1, characterized by that the excess gas not having been absorbed and containing carbon dioxide is conducted back into the cycle by either
   - conducting it through the waste product to be treated, or
   - immediately above the waste product to be treated, or
   - through the gas cooling system above the waste product to be treated, or

- dividing it and conducting a partial flow through the waste product and another partial flow above the waste product.

3. A method according to claim 1 and 2, characterized by that a temperature is adjusted in the front portion of the gas cooling system, which is at least 3 K and at most 15 K below the temperature in the stripping container, whereas in the rear part another cooling-down process to 40 °C takes place.

4. A method according to one or several of claims 1 to 3, characterized by that to the excess gas conducted in the cycle, in addition carbon dioxide in a mixture with other gases is added from outside.

5. A method according to one or several of claims 1 to 4, characterized by that a pressure of 30 to 70 kPa is selected.

6. A method according to one or several of claims 1 to 5, characterized by that first it is evacuated to 10 to 30 kPa, and then the pressure is increased to 40 to 80 kPa.

7. A method according to one or several of claims 1 to 6, characterized by that fermented manure is used as

waste product, and that it is heated up to 70 to 85 °C at a reduced pressure.

8. A method according to claim 7, characterized by that the fermented manure is filtered before its thermal vacuum treatment in a per se known manner, and that the hygienized discharge manure formed after the thermal treatment is sprayed on meadows and fields as a virtually odorless sludge liquor stripped from nitrogen compounds, whereas the solid substances separated after filtration are composted.

9. A method according to one or several of claims 1 to 8, characterized by that as said aqueous absorption agent, a sulfate solution and/or a gypsum suspension having a content of solid matter of 10 % by mass to 50 % by mass is used, wherein the latter is stirred in a collection container, and the product containing deposited lime and ammonium sulfate is taken from the container.

10. A device for producing nitrogen fertilizer according to one or several of claims 1 to 9, composed of the following essential parts

- a stripping container for heating at underpressure,
- a collection container for a reaction in a heterogeneous phase,
- a heat storage for heat exchange,
- a vacuum pump,

- a heating water pump,
- a circulation fan,
- a stirrer,

in order to thus secure the circulation movement, and per se known pipelines, shutoff devices, and measurement and control devices.

11. A device for producing nitrogen fertilizer according to claim 10, characterized by that

- the device comprises an additional gas cooling system with an upwards directed separating column and a downwards directed cooler,

and

- additional pipelines and ball valves,

in order that the circulating gas

- can be fed fully or partially into the stripping container above the waste product or
- through the cooling system into the collection container or
- partially into the stripping container into the waste product,

wherein the residual flows in case of a division of the circulating gas are optionally fed into the two remaining designated entry positions.